

Ser. No.: 10/826,783
Amdt. Dated: 10-27-2005
Reply to Office Action of Aug. 1, 2005

I. AMENDMENTS TO THE SPECIFICATION:

- Instruction 1: Please replace the ABSTRACT of the specification with the following:

An improved process for optimizing the stimulation of A method of stimulating an entire target formation of an oil or gas well during fluid treatment is obtained by dividing the target formation into intermediate zones and initiating stimulation in each intermediate zone. Once stimulation is initiated in each intermediate zone, ball sealers are used to block the casing perforations at the intermediate zone and divert fluids to another intermediate zone. After stimulation has been initiated in all intermediate zones, the ball sealers are removed from the perforations and treatment of the entire target formation is conducted.

- Instruction 2: Please replace paragraph [00023] of the specification with the following:

[00023] The operator takes another ISIP, and again calculates the Fracture Gradient, and compares it with the initial fracture gradient (260). If the ISIP is different from one zone to the next (a difference in the Fracture Gradient of 0.02 psi/ft is indicative for diversion), then that confirms that fluids are reaching other parts of the formation and, thus, the process is effective. If diversion is no longer occurring, the operator may continue to induce a fracture in the current intermediate zone to establish better connectivity (275). If the Fracture Gradient is higher than the previously calculated Fracture Gradient, then diversion is occurring, and the operator repeats the process (270). The above referenced process (steps 240 through 270) is repeated until each different zone within the formation is identified and either the corresponding perforations are sealed with ball sealers and/or stimulation in the zone is initiated. After the process has been repeated for each zone, then the wellbore is opened and closed repeatedly to atmospheric pressure, "surging" the balls and allowing sufficient flowback for all of the balls to be unseated simultaneously and either fall to the bottom of the well or rise to the surface. Thus, the fluid is then surged to unseat the ball sealers (280) and the ball sealers are allowed to drop to the bottom of the casing or to float to the top. The normal stimulation treatment is then performed (290) at a higher average pressure than was used during the diagnostic phase.